BOTANICAL GAZETTE.

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VITALITY OF THE SEEDS OF DATURA TATULA, L.—In answer to the call for facts bearing on the vitality of seeds, I venture to contribute what follows:

From the spring of 1855 to the autumn of 1866 I occupied a house on Duke street, in the heart of the city of Lancaster, Penn. To this house was attached a garden, which extended to an alley in the rear and was separated from it and the neighboring gardens by high, close board fences. Its cultivation had been neglected, and, on taking possession, I observed in the lower end of it a huge stalk of *Datura Tatula*, L., which had been allowed to grow and spread itself and ripen and shed a large crop of seeds. That summer, after the ground was dug and planted, a numerous host of young Jimpsons came up. These were extirpated. The next season another set appeared, and were dealt with in like manner, and so on, up to *the 10th year*, the numbers diminishing each year. I am sure they all sprang from seed of the same sowing. The second year I began to feel curious about their persistence, and then and during the years that succeeded carefully searched the alley far and near and all the gardens and vacant lots in the neighborhood and discovered no parent from which they could have come. It was barely possible for the seeds to have been introduced in manure, but then the occurrence of the plants only around the spot *where the old stalk stood*, and their gradual diminution in numbers forbade the supposition. *In all parts* of the garden seedlings of the honey-locust and ailanthus would at times show themselves. These were readily traced to cultivated trees at some distance. The strap-like pods of the former and the winged fruits of the latter are scattered widely by the winds, but the seeds of *Datura* require other means of transport.—THOS. C. PORTER, *Easton, Penn.*

FROM THE INDIAN TERRITORY we have received a collection of Plants numbering several hundred, made during the years 1875–7, by Timothy E. Wilcox, M. D., Ast. Surg. U. S. A. Below is a list of all the species among them *not* growing east of the Mississippi River, and consequently not described in Wood's Class Book, nor in the Botanist and Florist. It will be noted with surprise that only *one species* had been seen by Linnaeus:

Delphinium occidentale (*D. elatum*, var. *occidentale*, Watson.) Hoary pubescent above. Flowers bluish-white, the spur long, ascending, downy-canescent, the lower (apparently upper) petals bearded with cotton and their long claws spurred at the base.

Streptanthus hyacinthoides, Hook. Flowers large, deep bluish-purple. An attractive plant.

Biscutella Wislizeni, Eng. Found also in Texas and Southern California. Fruit large, 2-orbed. Flowers white.

Lepidium integrifolium, Nutt.

Vesicaria Ludoviciana, DC.

Paronychia Jamesii, T. & G.

Talinum parviflorum, Nutt.

Malvastrum coccineum, (Nutt.) Gray.

Krameria lanceolata, Torr.

Rhus trilobata, Nutt. Regarded by some as a variety of *R. aromatica*, Ait.

Dalea aurea, Torr. Large oblong spikes with golden yellow corollas set in the white plumage of the calyxes.

Petalostemon villosum, Nutt.

Astragalus mollissimus, Torr. Called "Pony Weed." It is an object of dread in the Territory, being considered *fatal* to the horses that feed upon it. The plant is densely silky-canescent all over, erect near 1 foot. Leaflets about 12 pairs, oval. Spikes

on a long peduncle, oblong, dense. Flowers nearly 1 inch long, blue-purple. Pod 2-celled, curved, grooved at each suture.

A. bisulcatus, Gray.

A. Nuttallianus, DC.

A. glareosus, Dougl.

A. RECTICARPUS, (*n. sp.*) Under the section HOMALOBI. Cinereous with minute appressed hairs. Stems assurgent or erect 1 foot, slender, simple. Leaves subsessile, leaflets 7–9, mostly alternate, oblong-spatulate, apiculate, edges revolute. Peduncle longer than the leaves, spicate, 5–20-flowered. Stipules subulate. Calyx segments subulate-filiform, *thrice longer than the tube*. Corolla 4 lines long, purplish, vex. as long as the keel. Pod straight, sessile, deflexed, linear-prismatic, 1-celled, 1¼ inch long, 8–10-seeded.

Oxytropis Lamberti, Pursh.
Psoralea digitata, Nutt.
P. linearifolia, T. & G.
P. cuspidata, Pursh.
P. hypogaea, Nutt

Hoffmanseggia Jamesii, Torr. Plant beset all over with black dots, and groaning under the burden of its names.

Glycyrrhiza lepidota, Nutt.
Mimosa fragrans, Gray.
Acacia hirta, Nutt.
Œnothera pinnatifida, Nutt.
Œ. Missouriensis, Sims.
Œ. Hartwegii, Benth.
Œ. caespitosa, Nutt.
Stenosiphon virgatus, Spach.
Mentzelia nuda, T. & G.

Apium (Leptocaulis) patens, (Nutt.) Wood.

Townsendia Wilcoxiana, Wood. (Bulletin Torr. Bot. Club, Vol. 6, p. 163.) Differs from *T. sericea*, Hook., in having the pappus of the ray and the disk equally long and copious, also the teeth of the tubular florets colored brown.

Chrysopsis villosa, Nutt.
Zinnia grandiflora, Nutt.
Riddellia tagetina, Nutt.
Senecio Riddellii, T. & G.
Actinella acaulis, Nutt.
Grindelia squarrosa, Dunal.

G. NUDA, (*n. sp.*). Glabrous, corymbously branched. Leaves sessile, oval, ovate or oblong, the upper lanceolate, all evenly glandular serrate. Heads discoid, involucre squarrous, pappus of 4 (rarely 3 or 5) stiff white bristles as long as the floret.

Helenium tenuifolium, Nutt.—but the lower leaves are often pinnately divided.

Gaillardia lanceolata, Michx.
G. pulchella, Foug.
Flaveria linearis, Lagasca.
Artemisia filifolia, Torr.
Hymenopappus tenuifolius, Pursh.
H. lutens, Nutt.
Dichætophora campestris, Gray.
Taraxacum palustris, DC.
Mimulus lutens, Linn.
Salvia Pitcheri, Torr.
Heliotropium convolvulaceum, Gray.
Eritrichium Jamesii, Torr.
Collomia longiflora, Gray.
Gilia pinnatifida, Nutt.
Convolvulus lobatus, Eng. & Gr.
Ipomaea leptophylla, Torr.
Physalis lobatus, Torr.
Withania Coronopus, Torr.
Eustoma Russelianum Nutt.
Acerates decumbens, Den.
Obione argentea, Moq.
Ceoton Texensis, Muller.
Carex marcida, Boott.
Spiranthes Romanzoviana, Cham.

Poa Michaurii, Kunth. A remarkable grass. The spikelets when mature are cream-white, about 12-flowered, near 1 inch long, all in a short dense panicle.

Elymus Canadensis, var. *minimus*, (Wood.) Plants 2–4 inches high, the spike 5–10 lines long, concealed more or less in the sheath of the upper leaf Spikelets and flowers small in proportion.

Buchloe dactyloides, Eng. A diœcious grass, remarkable for the dissimilarity of the sterile and fertile plants.—A. WOOD.

POLYGAMOUS FLOWERS IN POPULUS.—On the 7th of April I found a few pistillate aments of *Populus tremuloides* with both kinds of flowers, and on fast-day (the 11th inst.,) I found four small sized female trees that were more or less polygamous.

On one of these trees nearly every ament that I examined had perfect flowers in addition to the regular pistillate ones. In one instance the stigma was partially covered with pollen from the open anther which was apparently just in the act of discharging its pollen.

The number of stamens in these flowers varied from one to four. Usually two, or three, but sometimes four stamens were arranged around the pistil, the disk being enlarged for their accommodation.

I do not remember to have seen anything of this kind mentioned before in connection with this genus, but Prof. Goodale tells me that Mr. Bailey has noticed it in *Populus balsamifera*, near Providence, R. I., and Mr. Watson, to whom I communicated my specimens, says it has occurred among the willows.

In looking at the poplars soon after some recent cold rains I noticed that those buds which had pushed out the earliest, were so much injured that they would drop off almost at a touch. *Populus tremuloides*—the sterile aments—was in full bloom in Medford on the 29th of March, and *P. grandidentata* the following week.

It is gratifying to know that this genus is to be worked up anew by one so fully competent for the task as Mr. Watson, and that all confusion is likely to be cleared away, and the different species clearly and accurately defined.—GEO. E. DAVENPORT, *Medford, Mass.*

ON THE DISTRIBUTION OF CERTAIN PLANTS IN MISSOURI; BY G. C. BROADHEAD, of Pleasant Hill, Mo.—*Aquilegia Canadensis*, L., may be found early in the spring on shaded limestone hillsides in various parts of the State.

Aquilegia Canadensis var. *alba*, a rare and pretty plant was found on limestone slopes in Jackson county.

A. Canadensis, L., a pale yellow variety was found in Buchanan county.

Anemone Pennsylvanica, L. Found on Missouri bottoms from St. Louis county to Atchison county. On the upland and lowland prairies of Atchison and Holt counties it is very abundant, but in North Missouri I have not elsewhere observed it.

Anemone Caroliniana, Walt. From Cass county south along the western border of the State. It is found on prairies west and south. A purple variety is sometimes found in Cass and Bates counties. Dr. Engelman states that this closely resembles the European *A. stellata*. This is one of our earliest and prettiest flowers.

Hepatica triloba, Chaix. Only seen in Central and Eastern Missouri, on rocky and shaded hillsides.

Cocculus Carolinianus, DC. From Cole to Vernon and southwardly.

Brasenia peltata, Pursh. On ponds of Barton and Jasper.

Nymphæa odorata, Ait. Have only seen this beautiful and fragrant water plant in Vernon and Barton.

Nuphar advena, Ait. On ponds of Vernon and Bates. This is also quite common in Central Illinois.

Corydalis crystallina, Engl. From Cass southwardly; sometimes very abundant, especially on sandy slopes and rich prairie mounds. In North Missouri I have also found it in Livingston county, and it may occur at other localities in that district.

Cleome integrifolia. Found in Clay county, and also at Leavenworth, Kansas. Introduced from far West.

Viola pedata, L. Birds-foot violet or velvet violet. Rare in Western Missouri, but common on dry ridges in Eastern Missouri. Is very pretty.

Silene regia, Sims. In Jasper, Maries, Cole and southwardly. A rich crimson flower growng on thin rocky soil or oak barrens.

Talinum teretifolium, Pursh. Is nowhere common, but I have found it in many counties in South Missouri from St. Francois to Cole, Cass and Newton.

Callirhoe digitata, Nutt. Found in Lawrence and Jasper, on limestone soil where it is very abundant. In Barton county, just north, it is not found, but as soon as we leave its sandy soil and touch the limestone slopes of Jasper, the graceful and beautiful *Callirhoe* makes its appearance.

Polygala Nuttallii, T. & G., is common from Bates southwardly, but northwardly is very rare.

Polygala incarnata, is not common, but occasionally is found on the prairies.

Ptelea Trifoliata, L. From Cole northeast and Vernon south and east.

Hypericum ——? a species with globose head, is common in Eastern Missouri; does not occur in northwest, but is again found in Barton and southwardly.

Vitis riparia, Mx. The river grape grows along all the principal streams, ascending to the highest trees. A variety grows on prairie valleys and rugged limestone hillsides and on fences in fields in Northwest Missouri. On rich ground the berry is often sweet and good, in other localities it sometimes possesses a slightly bitter taste. It often ripens very irregularly on the same bunch. A berry being quite ripe while others may not be half grown. The berries are generally close on the bunch. This variety is often called slough grape.

A *Vitis*, not in Gray, although sometimes called Muscadine, is often found in Southern Missouri, also rarely found in one or two counties in eastern part of North Missouri, along rocky streams, berry ripening in August.

Rhamnus Carolinianus, Walt., I have only seen in Madison county.

Acer rubrum, L. Red maple, common on ridges and near streams in southeast Missouri. In North Missouri it has only been observed in Calaway county.

Tephrosia Virginiana, Pers. In Johnson, Bates and southwardly, and probably in Southeast Missouri.

Psoralea esculenta, Pursh. In Bates and southwardly on prairies. Root edible.

Psoralea melilotoides, Michx. In Vernon on prairies.

Vicia Americana, Muhl. In Bates, Platte, and in Northeast Kansas.

Clitoria Mariana, L., I have only found on dry pine ridges in Southeast Missouri.

Oxytropis Lamberti, Pursh. Only have seen it on bare bluffs in Atchison county in the extreme northwest, associated with *Pentstemon grandiflora*.

Prunus Virginiana, L., Choke cherry, is occasionally found in North Missouri north of the Hannibal & St. Jo. Railroad; also in the southern part of Buchanan, near Grand Pass, Saline county, but no further South.

Prunus Chicasa, Michx. Is not found in northwest Missouri, but abounds in St. Charles; is occasionally found in Saline, Lafayette and Bates, but is more common southwardly.

Prunus Americana, Marsh. There are several varieties of this plum; it is generally common throughout the northern part of the State. The fruit of this and the last is much valued. A variety with hard and acerb fruit and of no value is often found.

Neillia opulifolia, Benth & Hook. Nine-bark or seven-bark abounds in Eastern Missouri a little west of Jefferson City, thence through Henry, Vernon and southwardly, but is not found in northwest.

Potentilla Norvegica, L. I have only observed a single plant in Montgomery Co.

Rosa Carolinana, L. I do not know that this rose is certainly found in Missouri, but I have seen a species (not in bloom) in Madison that may be it.

Rosa ——? I have found a species in Warren, Reynolds and Madison free from prickles, but have not seen it in blooom.

Crataegus, L. At least six or eight species are found in Missouri.

Œnothera sinuata, L., I have only found on sandy slopes in Vernon.

Œ. serrulata, Nutt. Found on "Bluff" hillsides in Atchison county.

Œnothera speciosa, Nutt. This showy plant is one of our handsomest when in bloom with its large pure white blossoms, but is only found on the western border of Missouri where it ranges from Jackson county southwardly.

Œnothera Missouriensis, Sims. This plant with its large handsome bright yellow corolla I have found on rocky slopes on prairies in Bates, and also in Green and Lawrence counties.

Ribes Cynosbati, L. A gooseberry with fruit armed with long prickles like a burr have found on rocky bluffs of Missouri, in Gasconade county, where there was but little soil.

Sedum stenopetalum, Pursh. Have only found this on cherty glades at Grand Falls, Newton county.

Hamamelis Virginica, L. Only in southeast Missouri where it is abundant.

Aralia spinosa, L. Hercules' club. Only found in southeast Missouri, ranging from Madison county southward. It is commonly called "Tear blanket."

Cornus Florida, L. Flowering dogwood. Not found much further west than Jefferson City. Common eastwardly on dry hills. Further west is not found north of Jasper county. In Northeast Missouri is rarely found west of the extreme eastern counties.

Cornus circinata, L., Her. Round leaved dogwood. Found only in eastern Missouri on rich moist hillsides.

Liquidambar Styraciflua, L. Sweet Gum. Common in Southeast Missouri, occurring from Madison county southwardly.

Nyssa multiflora, Wang. Black Gum. Common in Southeast Missouri. A few trees only have been seen in Maries county. It does not occur in Western or Northern Missouri. In Southern Illinois it is found no further north than the southern part of Fayette county. *Nyssa multiflora*, Wang., Tupelo or Sour Gum, and *N. uniflora*, Walt., the large Tupelo, are both said to abound in the swamps of Southeast Missouri.

Viburnum dentatum, L. Arrow wood. Is occasionally found in Monroe and Shelby counties, but neither in Northwest nor Southwest Missouri.

Fedia radiata, Michx. Bates county and southwardly.

MONOTROPA UNIFLORA, L.—In the April number of the BOTANICAL GAZETTE I noticed with considerable surprise a statement made by Mr. A. H. Young, of LaFayette, Ind., that *Monotropa uniflora*, L., or Indian Pipe, Ice-plant, Fit-plant so-called, possessed poisonous properties somewhat resembling the effects of *Rhus Toxicodendron*, L. Now this is certainly news to me, and which cannot fail to interest many others engaged in the study of Medical Botany. I am constrained to say, and an experience of twenty-three years of closest attention to this subject has verified my conclusions, that *Monotropa uniflora* is not possessed of any toxic properties, neither in its outward or inward application of the human system. It is a remedy of some repute with the Eclectic School of Medicine, and in "King's American Dispensatory" and "Howard's Botanic Medicine," is very highly recommended for overcoming nervous irritability, epilepsy, chorea, etc., when used in large doses inwardly of course, and for ophthalmic as well as other inflamations of delicate mucous surfaces outwardly applied, either in its fresh state or the preserved juice. I have myself used it very much in ordinary cases of inflamed eyes, both chronic and acute, and have never seen or even before heard any evil effects following the most indiscriminate use. Have applied it to the eyes of infants when only three days old, in *Ophthalmia purulenta infantum*, as well as in old age in

every variety of so-called constitutions, and even where not successfully employed, no ill effects have ever been observed thereafter.

I always keep on hand a quantity of this medicinal agent—in the form of a tincture or dried plant, and when I can obtain enough of it, the expressed juice. I will merely mention a case of ophthalmia cured incidentally by *Monotropa uniflora*. Fourteen years ago, it was in the early part of July, I went woodcock-shooting with two friends, near Hackensack, N. J., and while taking some luncheon in a beech grove along the course of Saddle River, found a large patch of ground literally covered with *Monotropa uniflora* in full bloom. I have never met with such another "find" of this plant in all of my frequent rambles and excursions made in search of it. It covered a space some five feet wide by nine feet long, a beautiful sight of snow-white stems and nodding flowers. Being in need of some just then, I proceeded to fill my game-bag, and to the question, what it was used for, answered "good for sore eyes," little thinking that the party addressed was suffering from a chronic inflamation of the eye lids, the edges of which had a very fiery red appearance. No sooner said, than he proceeded to take in his game-bag a supply also, and he made a very good use of it, as I ascertained afterwards. His inflamed lids were entirely cured in four weeks' time and has had no further trouble since, by applying the fresh juice of the stems he obtained while it lasted.

Now in view of all this, and coupling it with the fact, that in physical properties the *Monotropa* abounds in a mucilaginous and astringent property, either of which are quite innocuous, may it not have been possible that the young lady in question, who was supposed to have been poisoned by *Monotropa uniflora*, had come in contact with some of the far-spreading roots of *Rhus Toxicodendron*, in the attempt to lift or pluck the stem as close to the ground as possible? I have been poisoned in just such a manner myself, while collecting *Monotropa* as well as other plants. Now I have a wholesome fear of *Poison Rhus*, and manage to get poisoned with it anyhow several times every year—hardly ever by its leaves which I recognize at a long distance, never by its exhalations, but generally by coming in contact with its twining stems, or roots and fibrils so difficult to distinguish when underground or covered by decayed vegetable matter. The eruption following contact with *Poison Rhus*, when not accompanied by any swelling, only lasts a few days, just like that case referred to. I have often inoculated myself and others with *Poison Rhus* in order to antidote its disagreeable effects with different remedies, and have seen its action in every conceivable appearance.

But I am digressing from my subject. May it not have been possible that a few fibrils of *Rhus* were adherent to the scales or bracts of the stem, or passing through the matted fibrous rootlets of the *Monotropa*, which in handling could not have been avoided of being touched? May that lady not, therefore, have been an unsuspecting victim to the lurking poison of *Rhus Toxicodendron*?—RICHARD E. KUNZE, M. D.

FERNS OF KENTUCKY.—I have received from Mr. John Williamson, of Louisville, Ky., who is preparing a "Hand-Book" of the native ferns of that State, some etchings that have given to me, and others, so much pleasure, and which augur so well for the success of his work, that I am tempted to offer this notice in advance of publication.

These etchings are most charmingly and faithfully executed, and the graceful and successful management of the larger species in adapting them to the limited space they will occupy in the plates shows that Mr. Williamson possesses the true artistic feeling, and enters fully into the poetic nature of the beautiful plants that he is aiming to describe and portray.

The small species—especially *Trichomanes radicans*—have all the ease and natural grace of the ferns themselves, while the extra plates giving the mode of the fructification of each genus are very clearly and strongly depicted, and materially increase the value of the work as a whole.

I am unable to speak of the text of Mr. Williamson's work at the present time, but the collection of fifty-nine etchings with which he proposes to illustrate his book alone would be worth more than the price of the book to any fern student. I am delighted with them, and if the whole work is completed in the manner in which the etchings now in my possession indicate that it will be, then it cannot fail to prove a most valuable addition to our fern literature.

That the study of our native ferns is on the increase, and likely to become as popular as the same study is in England, where valuable and costly works on the subject have multiplied, the very gratifying success with which Prof. Eaton's splendid work on the "Ferns of North America" is meeting sufficiently indicates.

There is, therefore, ample room for such special hand books as Mr. Williamson's is intended to be, and I sincerely trust that the author will meet with a generous encouragement and success.—GEO. E. DAVENPORT.

SOUTHERN PLANTS.—Mr. A. H. Curtiss, of Jacksonville, Florida, proposes to issue sets of dried plants of the Southern United States, in installments or fascicles of 250 species each. Several sets of the first fascicle have been sent to us, and are deposited here, and one of them is now being added to this Herbarium. I wish to say that the specimens are so well selected, so ample and complete, so well named—all with full printed labels in neat form—that it is a pleasure to look at them, and that I consider them very cheap indeed at the price fixed, namely $20 for 250 species.—ASA GRAY *Herbarium of Harvard University.*

BIBLIOGRAPHICAL INDEX TO NORTH AMERICAN BOTANY, by Sereno Watson. Part I. Polypetalæ.—This has long been a sadly needed work, and Mr. Watson has gone through an amount of necessary labor for the benefit of botanists for which we can never be too grateful. The Botany west of the Mississippi is especially scattered and very few have access to books that can enable them to trace up the authorities and synonomy of all of our western plants. This work meets the trouble exactly, brings together all these scattered references and enables the botanist of the humblest means to possess the names, synonomy and authorities of all the species of North American plants. To keep pace with the changes that are being made in names is important, and we would advise all of our contributors to send for the work at once and then some will find out that the names they sometimes send us have gone out of date long ago. The work is published by the Smithsonian Institution and the price is fixed at $2.00 not half the cost. Copies can be had for that price by applying to Sereno Watson, Cambridge, Mass., Herbarium of Harvard University. The Polypetalæ of North America sum up as follows: Orders, 69; Genera, 545; Species, 3,038.

BOTANICAL CONTRIBUTIONS, by Asa Gray. This is No. 25 of these Contributions by Dr. Gray and we hope that the good work will go on for many years to come. It is divided into four parts. Part 1 is upon American *Elatines*. Instead of a single species of *Elatine* it seems that we have four: *E. triandra*, Schkuhr., *E. Americana*, Arn., *E. brachysperma*, n. sp., and *E. Californica*, n. sp. Part 2 contains the descriptions of two new genera of *Acanthaceæ*, named *Carlowrightia and Gatesia*. The former is represented by two species, found in Texas and Arizona; the latter by one species which ranges from Northern Alabama and Southern Tennessee to Eastern Texas. Part 3 is devoted to the description of new *Astragali*. We always expect a liberal share of this genus and we are not disappointed, for Dr. Gray here adds 17 new species. Part 4 contains "Miscellaneæ," being a description of various new species. Dr. Parry describes a *Boykinia*, and Dr. T. C. Porter, an *Actinella*, to which Dr. Gray adds a new species in each of the following genera: *Galium*, *Aster*, *Erigeron*, *Laphamia*, *Actinella*, and *Arnica*.

DENTARIA LACINIATA.—In Vol. I. of the GAZETTE I notice some remarks on varia tions in *Dentaria laciniata*, Muhl. A year ago while botanizing in Williamstown, Mass., I came across a few plants which had very much the aspect of *D. diphylla*, L., having the two alternate leaves with ovate leaflets, but the lateral leaflets of the stem leaves were 2-parted and the terminal 3-lobed; the lateral leaflets of the root leaves 2-divided and the terminal 3-parted. The divisions were cut-toothed or even lobed. The root stock seemed to be intermediate between that of *D. diphylla* and of *D. laciniata*. I consulted with the late Prof. Tenney and he thought it might be *D. laciniata*, but as this had never been found before in Williamstown, and *D. diphylla* was very common near it, I put it in my herbarium with the name *D. diphylla*, L. This spring I sent a specimen to Dr. Gray, who replied, "One of the least laciniate forms of *D. laciniata*." The "Manual" says: "All these species except the first (*D. maxima*, Nutt., *D., heterophylla* Nutt., *D. laciniata*, Muhl., and *B. multifida*, Muhl.,) probably run together." The query arises in my mind, Why except the first? The "Manual" also says of *D. diphylla*, "petals white." I have found them often with a decidedly pink coloring. Perhaps this will be a partial answer to Mr. Meehan's question in the GAZETTE of February, 1877. I hope Botanists will study up the variations in this genus and report results.—C. H. FORD.

RECENT PUBLICATIONS.—*American Journal of Science and Arts*, April.—There is a short review of the "Flora of Tropical Africa; by Daniel Oliver. Vol. III. *Umbelliferæ* to *Ebenaceæ*." The order of Compositæ is represented by 117 genera, 17 being peculiar to this Flora. The only large genus is *Vernonia*, with 78 species.

The American Naturalist, May.—W. J. Beal has an interesting illustrated paper on the "Hairs and Glandular Hairs of Plants, their Forms and Uses."

Bulletin of the Torrey Botanical Club, March.—Prof. O. R. Willis has an article on the "Growth of Exogens," and Mr. N. L. Britton gives quite an extensive table on the subject of the fall of leaves.

List of Native and Exotic Ferns in the Green-Houses and Grounds of J. Warren Merrill, Cambridge, Mass.—This is quite a formidable list and surely shows great labor on the part of the proprietor and no sparing of expense. Mr. Merrill wishes to exchange dried fronds with those who have new varieties in duplicate.

A Catalogue of the Flowering Plants and Higher Cryptogams growing without cultivation within thirty miles of Yale College. Published by the Berzelius Society.—This is an elegantly published list prepared by the students of the Sheffield Scientific School. There is an introduction by Prof. D. C. Eaton, and also a good map of the territory embraced. The Phaenogams foot up 1,233 species, the Cryptogams (including *Acrogens, Musci and Hepaticæ*) 273, making 1,506 species enumerated in the catalogue.

Proceedings of the Academy of Natural Sciences of Philadelphia, Part III.—September, October, November and December, 1877.

Ferns of North America by Prof. Daniel C. Eaton, Parts IV and V.—This publi cation is making its appearance much more promptly than was expected and the double number before us shows as fine workmanship as any of the preceeding numbers. If anything, the plates are finer than before and the ferns lie as fresh before you as if just pressed. This number contains plates and descriptions of *Aspidium Nevadense*, Eaton (n. sp.), *Pellæa densa*, Hook., and *P. pulchella*, Fee., *Cheilanthes viscida*, Davenport, and *C. Clevelandii*, Eaton, *Asplenium unitum*, R. Br., *Aneimia Mexicana*, Klotzch, and *A. adiantifolia*, Swartz, *Asplenium Ruta-muraria*, L., and *A. Septentrionale*, Hoffm. Our only objection is that the plate of *Asplenium unitum* is so large that it does not allow any room for trimming when we come to bind.